

SEIT Technical Details



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Mission Planning SEIC
Industry Day

16 Oct 03



Overview

Mission Planning SE

- Purpose and Overview
- Mission Planning Enterprise Roles/Responsibilities
 - Government Program Management
 - Framework,
 - Common Software
 - UPC Developers
 - Legacy System
- Technical Tasks



Systems Engineering Integration Team

Mission Planning SEI

- Purpose

- The Vision is to evolve Mission Planning into a cohesive set of mission planning tools and components for all of DoD and coalition partners.
- Systems Engineering Integration Team (SEIT) will ensure that these tools and components are architecturally sound, robust, controlled, easy to use, integrate well with the system, adhere to government standards, and adhere to JMPS business and technical rules.



SEIT Sphere of Influence

Mission Planning SEI

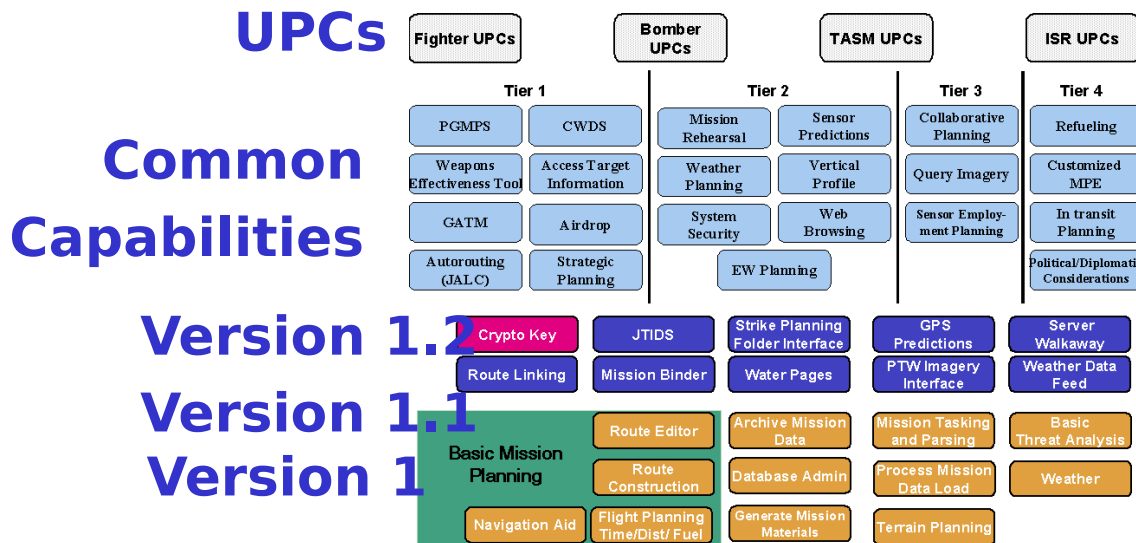
- Key products provided via Mission Planning Enterprise Contract (MPEC) contractors
 - JMPS Framework Software, JMPS UPC Software, JMPS Common Software and Legacy systems
- SEIT goals
 - Foster migration from legacy systems to JMPS
 - JMPS Enterprise wide planning, software integration, risk management, etc...
- SEIT Sphere of Influence begins at the conceptualization phase
 - Varying degrees of influence on software development and integration (Framework, Common Software, and Unique Planning Components (UPC)) and level of support required by each Service.
 - Systems Engineering efforts across Mission Planning Enterprise



Why Do We Need a SEIT Contractor?

Mission Planning SEIT

JMPS is growing rapidly with concurrent, interrelated software developments across multiple contractors and services



JMPS needs a Systems Engineering and Integration Team to foster this growth and ensure all the individual efforts work together



SEIC Core Competencies

Mission Planning SEI

- Large-Scale Integration Expertise ~ 1+ million lines of source code
- Enterprise Management expertise
- Object Model Expertise using Unified Modeling Language (UML) notation
- Software development expertise in technology area
- Efficient configuration management system
- Development Test expertise
- Developer Website/Help desk support services experience
- Training package preparation and conduct experience
- Security qualifications
- Effective documented management processes
 - Capability Maturity Model Integration (CMMI)
- Acceptance criteria for software components
 - Enforcement of technical rules
 - Design standards



Typical Product Responsibilities

Key Yellow SEIC Contract

Green Government

Blue Common Software

/framework maintainer dev

Developer defined as Framework Maintainer, Common Software

Mission Planning SEIT

Future Requirements Management Assist	Program Management					
	Systems Requirements Analysis	Req. and Design Compliance	Integration Test	System Test	Operational Test Assist	Warfighter Use Assist

HW/SW Req. Ana.	Component Test	Component Integration Test
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Government Program Mgmt

- Future Requirements Management
- Program Planning
- Controlling the Technical Effort
- Product Line Evolution Management
- Contract Management
- Program Funding
- Risk Management
- System Architectural Considerations
- Organizational development

Typical Products
Risk Management Process
Requirements Process

Developer

- HW/SW Requirements Analysis
- HW/SW Design
- Design Component
- Design Capability
- Component Test
- Capability Testing
- Risk Management
- Technical Rules, Standards
- Metrics
- Training inputs

Typical Products

Software Requirements Specification
Interface Design Documentation
Programmers Guide
Component test procedures
COE compliance Level 6
Security compliance & Metrics

SEIT Tasks

- Integration
- Requirements Analysis
- Architecture and Design Guidance
- System Evolution Management
- Understanding UPC Customer Needs
- CM DM QA Ilities
- Cost, Schedule, Performance, Quality
- Risk Management
- Process Definition and Management
- User Support
- Engineering Management
- Government Program Man. Support
- Developer Support
- Maintain close coordination with Warfighters

Typical Products

Top-level Architecture,
Integrated Master Schedule,
Metric reports, Data Model, CM



SEIT Tasks

Key (SC) SEIC Contractor
(G) Government
(CC) Common Software/framework maintainer developers
(B) SC and/or G

Mission Planning SEI

Systems Requirement s Analysis	Req. and Design Compliance	Integrati on Test	System Test	Operational Test	Warfighter Use
				Assist	Assist

- **Integration (continued)**

10. Perform Security certification/Accreditation (B)
11. Provide Public Interface control (B)
12. Integrate and test JMPS Framework and common software (B)
13. Integration of additional flight planning software per government request. (B)
14. Assist other developers in asynchronous testing (B)
15. Support compatibility testing among UPCs (B)

- **Requirements Analysis**

1. Manage and review JMPE System requirements (B)
2. Develop JMPE System requirements, ie. ISRT inter-service requirements team (G)
3. Manage high-level Use Case data base and traceability to system requirements and system tests (B)
4. Manage operational Use Case data base and

SEIT Tasks

- Integration
- Requirements Analysis
- Architecture and Design Guidance
- System Evolution Management
- Understanding UPC Customer Needs
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- User Support
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Typical Products

Top-level Architecture,
Integrated Master Schedule,
Metric reports, Data Model, CM
Plan



SEIC Tasks

Mission Planning SEI

- **System Engineering**
 - **Requirements Analysis.** {Review FY04/05 Common Capability (CC) packages for Mission Planning Enterprise Contract (MPEC)s}
 - **Interdependency Analysis.** {Define CC interdependencies, refine integration schedule based on findings}
 - **Interface Definition.** {Develop interfaces for CC and Framework (FW)}
 - **Requirements Traceability.** {Trace from Operational Requirements Document (ORD) to test}
- **Architecture and Design**
 - **Review and extend Object Model, Top-Level Architecture, Data Architecture, and CCs adherence to architecture technical rules.**
 - **External Interface Analysis.** {Identifying automated interfaces (e.g. Air Tasking Order (ATO))}
 - **Technical Standards.** {Design, Common Operating Environment (COE), User Interface and Windows Logo}
 - **Performance Analysis.** {Tools/strategies to improve performance, Key Performance Parameters (KPP) relation to components}
 - **Component Design Support.** {Proper use of FW and CCs}



SEIC Tasks

Mission Planning SEI

- **System Evolution. {Roadmap}**
- **Engineering Management. {Configuration Management (CM), Software development Metrics, knowledge repository, Component Management registering, receiving, scheduling, tracking delivery of data rights/software components}**
- **System Integration. {Integration plans, responsibilities, horizontal integration among JMPS CCs, integration of Software Development Kits (SDK)s, Wizards and Generic Unique Planning Components (GUPC)s}**
- **System Test. {Component test, System test, Regression tests}**
 - **Generic Test Procedures. {Validating UPC/CC/FW}**
 - **Problem Reporting System. {Centralized reporting system}**
- **Examples of Special Studies**
 - **Advanced Computer Flight Planning (ACFP) High Performance team (HPT) Support. {Support migration to JMPS}**
 - **Life Cycle Upgrade. {Support Mission Planning System (MPS) upgrade C2.3}**
 - **Synchronized Air Power Management (SAPM) Phase II.**



Next Steps SEIC

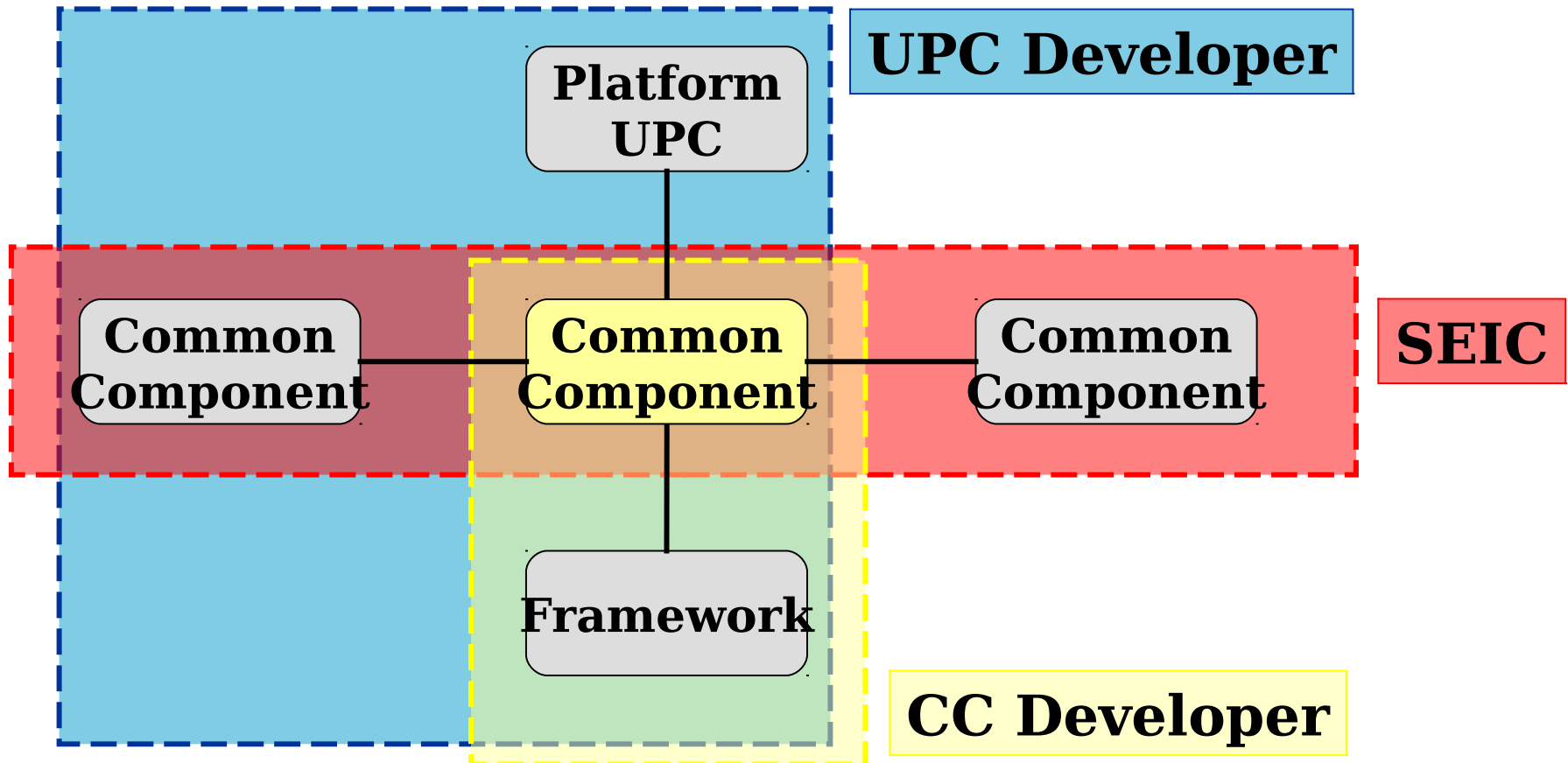
Mission Planning SEIC

- Anticipate defining MPECs delivery order packages
 - Review of Common Capabilities Requirements packages developed under short-term SEIC
- A Transition Plan, describing how Mission Planning will transition from a short-term to a long-term SEIC
 - A Strawman *Transition Plan* will be part of the Offerors library.



Horizontal/Vertical Integration

Mission Planning SEI





Integration Illustration

Mission Planning SEI

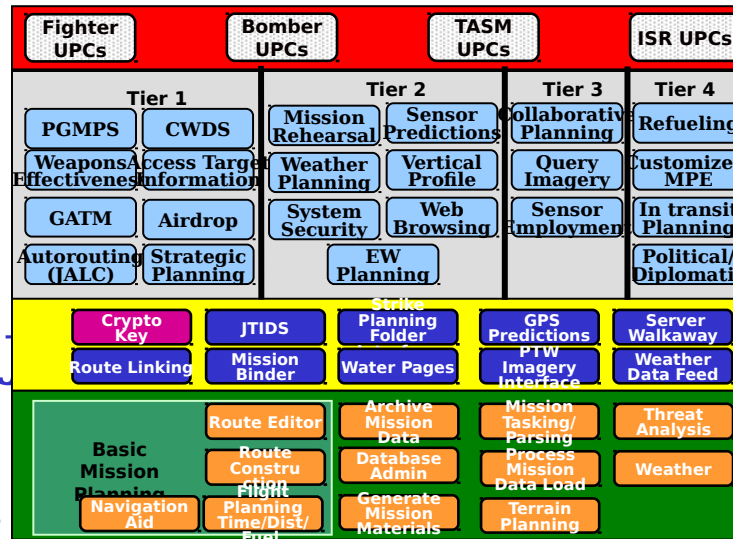
Horizontal Integration

UPCs

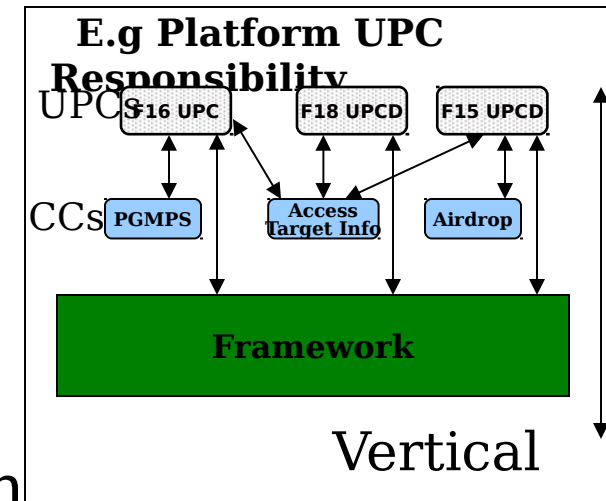
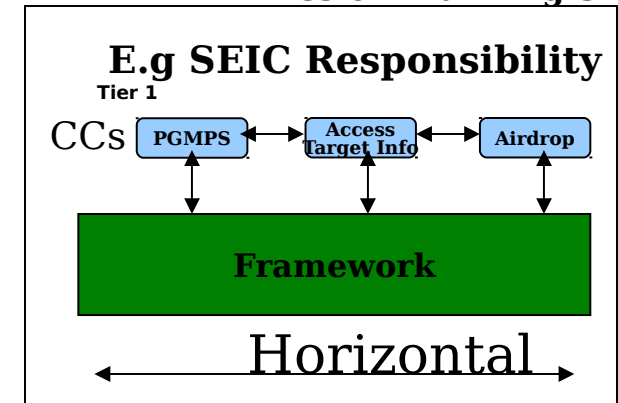
Future Common Capabilities

In development

Framework/
Flight Planning



Vertical Integration



- Horizontal (CC to CC) integration
- Vertical (Framework to CCs to Platform UPC) integration



SEIT Roles/Responsibilities:

Mission Planning SEIT

Government Program Management	SEIC	JMPE Developers(FW/CS)	UPC	Legacy systems
Maintain master baseline requirements and schedule; <ul style="list-style-type: none"> manage and approve changes to ORDS, Mission Needs Statement (MNS). 	Assess current baseline; <ul style="list-style-type: none"> identify and track new requirements; identify cost and schedule impacts; submit to government for review and approval; submit updates to requirements documentation Identification and resolution of requirements disconnections. 	JMPE Developers <ul style="list-style-type: none"> identify and track new requirements; identify cost and schedule impacts; Identify requirements disconnections 	UPC Developers <ul style="list-style-type: none"> identify and track new requirements; identify cost and schedule impacts; Identify requirements disconnections 	N/A
Systems Engineers <ul style="list-style-type: none"> Review/develop subset CC requirements packages for MPEC Manage Joint Review Board (JRB) defines technical system	SEIC Contractor executing a requirements management approach. <ul style="list-style-type: none"> The traceability from requirements documents to software components to test procedures. Change Tracking SEIC Contractor	<ul style="list-style-type: none"> submit to reqts government for review JMPE developers <ul style="list-style-type: none"> Implement Requirements Develop Software Specification (SRS) Delivery SRS to SEIC Participate in Working Group Meetings 	<ul style="list-style-type: none"> submit to reqts government for review UPC developers <ul style="list-style-type: none"> Implement Requirements Develop Software Specification (SRS) Delivery SRS to SEIC 	